202201UECM3473OE2a

Start again

Review of preview

Started on	Monday, 21 February 2022, 06:34 PM
Completed on	Monday, 21 February 2022, 06:35 PM
Time taken	9 secs
Grade	**0** out of a maximum of 10 (**0**%)

1

Marks: 1

You are given:

- The number of claims has a Poisson distribution.
- Claims sizes have a Pareto distribution with $\alpha = 5.0$, $\theta = 0.5$.
- The number of claims and claim sizes are independent.
- The observed pure premium should be within 9% of the expected pure premium 90% of the time.

Determine the expected number of claims needed for full credibility. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 890.87
Marks for this submission: 0/1.

2

Marks: 1

You are given:

- The number of claims has a Poisson distribution with mean 0.027.
- Claims sizes have a log normal distribution distribution with $\sigma = 0.5$.
- The number of claims and claim sizes are independent.
- The observed pure premium should be within 7% of the expected pure premium 99% of the time.

Determine the expected number of exposures needed for full credibility. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 64402.9
Marks for this submission: 0/1.

3

Marks: 1

You are given:

- The number of claims for each individual follows Poisson distribution with mean λ.
- Λ varies by individual in accordance with gamma distribution with parameters $\alpha = 2$ and $\theta = 1.66$.
- Claims severity follow a Pareto distribution with probability density function:
  $f(x) = 7\theta^7/(x+\theta)^8$, $x>0$, $\theta>0$.
- The standard for full credibility of aggregate loss experience is set so that the probability of observed claims being within 7% of expected claims is 99%.

Determine the number of claims required for full credibility. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 5498.21
Marks for this submission: 0/1.

4
Marks: 1

For a group dental plan, each individual's number of claims follow Poisson distribution with parameter λ. λ varies by individual in accordance with the following distribution:

λ	Probability
1	0.49
2	0.44
5	0.07

Claim sizes follow log normal distribution with parameter μ and σ = 0.30.
Classical credibility techniques are used.
The standard for full credibility of aggregate loss experience is set so that the probability of observed claims being within 5.00% of expected claims is 99%. Determine the number of claims required for full credibility. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 4511.68
Marks for this submission: 0/1.

5
Marks: 1

The full credibility standard for a company is set according to the methods of classical credibility so that the total number of claims is to be within 4% of the true value with probability P. This full credibility standard is calculated to 969 claims.
The standard is altered so that the total cost of claims is to be within 8% of the true value with probability P. The claim frequency has a Poisson distribution and the claim severity had the distribution

$$f(x) = (150-x)/11250.0, \text{ for } 0 < x < 150$$

What is the expected number of claims necessary to obtain full credibility under the new standard? _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 363.375
Marks for this submission: 0/1.

6
Marks: 1

Aggregate claims follows a Pareto distribution with parameters α = 5 and θ = 5. The full credibility standard is set according to the methods of classical credibility so that actual aggregate claims are within 9% of expected aggregate claims 95% of the time. Determine the amount of expected aggregate claims needed for full credibility. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 988.065844
Marks for this submission: 0/1.

7
Marks: 1

You are given the following:

- 130,000 exposures are needed for full credibility.
- The 130,000 exposures standard was selected using a normal approximation so that the actual total cost of claims is within 3.5%; of the expected total 95%; of the time.
- The number of claims per exposure follows a Poisson distribution with mean *m*.
- *m* was estimated from the following observed data using the maximum likelihood:

Year	Exposures	Number of Claims
1	17,029	1,103
2	24,217	1,790
3	23,844	1,310

If mean claim severity is 1,359, determine the standard deviation of the claim severity distribution. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 1759.775594
Marks for this submission: 0/1.

8
Marks: 1

For a group dental plan, each individual's number of claims follows Poisson distribution with parameter λ. λ varies by individual in accordance with gamma distribution with parameter $\alpha = 5, \theta_1 = 3$. Claim sizes follow and inverse Gaussian distribution with parameter $\mu = 1300$, $\theta_2 = 7.5$.Classical credibility techniques are used. The standard for full credibility of aggregate loss experience is set so that the probability of observed claims being within 10% of expected claims is 90%. Determine the number of claims required for full credibility. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 47986.843333
Marks for this submission: 0/1.

9
Marks: 1

For an insurance coverage you are given:

- Claim counts follow a Poisson distribution.
- Claim sizes follow an exponential distribution with mean μ.
- μ varies by insured according to a gamma distribution with parameters $\alpha = 6$ and $\theta = 200$.

The methods of limited fluctuation credibility are used. 2600 expected claims are required for full credibility.
The full credibility standard is that actual claims should be within 8% of expected claims with probability p.
Determine p. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.9924
Marks for this submission: 0/1.

10
Marks: 1

You are given:

- Claim frequency has a Poisson distribution.
- Claims size has a Gamma distribution with $\alpha = 3.5$, θ unknown.
- Using the methods of classical credibility, a full credibility standard of 940 expected claims has been established so that actual aggregate claim costs will be within 6% of expected aggregate claim costs P% of the time.

Determine P. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 89.48
Marks for this submission: 0/1.